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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,937	02/27/2004	Hisataka Toyoshima	9319T-000696	6792

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EXAMINER

MAI, NGOCLAN THI

ART UNIT

PAPER NUMBER

1742

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/789,937	<b>Applicant(s)</b> TOYOSHIMA ET AL.	
	<b>Examiner</b> Ngoclan T. Mai	<b>Art Unit</b> 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-9 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/3/05</u> . | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 1742

### **DETAILED ACTION**

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Rejections - 35 USC § 103***

2. Claims 1, 3-4, and 8-9 are rejected under 35 U.S.C. 103(a) as being anticipated by Nitta et al. (5,338,508) in view of Feild (U.S. Patent No. 2,430,671).

Nitta et al disclose spherical alloy steel powders having an average particle diameter of 20  $\mu\text{m}$  or less for injection molding that are produced by atomization method. Nitta et al. teaches the powders can be of Cr-Ni type stainless steel having a composition of 0.1 to 1.0% C, 0.20% or more by weight of Si with manganese/silicon ratio of 1 or higher, 8-30% Cr and 1-4% Ni. See col. 7, line 18 to col. 9, line 29 and Table 6, No. 51-54 and Table 7, No. 67-68. The powders disclosed having an average diameter between 8 and 9  $\mu\text{m}$  are used to form sintered part. Nitta et al teaches the powders are formed into sintered compact by kneading the powders with a binder, pelletizing the kneaded material by a pelletizer or crusher (grinder) to form a compound, compacting the compound by injecting molding and sintering, see col. 17, line 19 to col. 19, line 3. Note that the pelletizing the powders with binder by crushing, Nitta et al implicitly teaches granulating the raw powder.

The difference between the claims and Nitta et al is that Nitta et al. do not teach the presence of Nb in the alloy steel powder.

Feild teaches adding niobium to alloy steel to prevent precipitated carbon from becoming available to combine with chromium thereby preventing intergrannular corrosion of metals, col. 1, line 52 to col. 2, line 30. Nb is added in the amount of 0.3 to 1.0% to the steel is taught in col. 4, l. 27-36.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Nb of the claimed amount in the alloy steel powder disclosed by Nitta et al. to prevent the intergrannular corrosion as taught by Feild.

Art Unit: 1742

3. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nitta et al. and Feild as applied to claims 1, 3-4 above, and further in view of Kiyota (U.S. Patent No. 5,006,164).

Nitta et al in view of Feild disclose the granulated powder substantially as claimed. The difference between Nitta et al in view of Feild and the claims are that Nitta et al in view of Feild do not teach the size of the granulated powder (claim 5) and relative density of 97% or higher (claim 6-7).

However, it is known in the art that the higher density of sintered part can be obtained by the selecting of the iron powder and the amount of the binder and as well as the selecting of the sintering conditions, see Kiyota, col. 4, lines 31-35. Kiyota et al teaches the selecting of iron power can be done by pulverizing or classifying the iron powder into a desired particle size and shape, col. 4, lines 59-68. Thus would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Nitta et al by employing any one of the well known techniques as taught by Kiyota et al in order to improve the density of the sintered part of Nitta et al. Determination of an optimum or workable range of granulated powder size to obtain desired result would have been obvious one skilled in the art.

4. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH


Art Unit: 1742

shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoclan T. Mai whose telephone number is (571) 272-1246. The examiner can normally be reached on 9:30-6:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Ngoclan T. Mai  
Primary Examiner  
Art Unit 1742

n.m.